

REVIEW OF THE SPECIES OF *ELAPHROPEZA* MACQUART
(DIPTERA: EMPIDIDAE: TACHYDROMIINAE) FROM THE
CHINESE MAINLAND

DING YANG AND STEPHEN D. GAIMARI

(DY) Department of Entomology, China Agricultural University, Beijing 100094, China; (SDG) California State Collection of Arthropods, Plant Pest Diagnostics Laboratory, California Department of Food and Agriculture, 3294 Meadowview Road, Sacramento, CA 95832-1448, USA (e-mail: sgaimari@cdfa.ca.gov)

Abstract.—The species of the genus *Elaphropeza* Macquart from the Chinese mainland are reviewed. The following **new species** are described: *E. liui* and *E. anae*. A key to the species of the genus from the Chinese mainland is presented for the first time. **New combinations** are created for the following Chinese species which were included in *Drapetis* (*Elaphropeza*): *E. centristria* (Yang and Yang), *E. fujianensis* (Yang and Yang), *E. fuzhouensis* (Yang and Yang), *E. guangxiensis* (Yang and Yang), *E. guiensis* (Yang and Yang), *E. jianyangensis* (Yang and Yang), *E. jinghongensis* (Yang and Yang), *E. lancangensis* (Yang and Yang), *E. lii* (Yang and Yang), *E. longiconica* (Yang and Yang), *E. medipunctata* (Yang and Yang), *E. meihuashana* (Yang and Yang), *E. paucipunctata* (Yang and Yang), *E. pilata* (Yang and Yang), *E. postnigra* (Yang and Yang), *E. ruihensis* (Yang and Yang), *E. striata* (Yang and Yang), *E. triangulata* (Yang and Yang), *E. xanthina* (Yang and Yang), *E. xizangensis* (Yang and Yang), and *E. yunnanensis* (Yang and Yang).

Key Words: Empidoidea, Empididae, Tachydromiinae, *Elaphropeza*, China, new species

The genus *Elaphropeza* Macquart belongs to the subfamily Tachydromiinae (Diptera: Empididae), and was previously considered a subgenus of *Drapetis* Meigen. It is very similar to *Drapetis* in having an indistinct gena, the first basal cell distinctly shorter than the second basal cell, and the long Rs, but it can be separated from *Drapetis* by the hind tibia with *ad* (anterodorsal setae) and the usually yellow body. The genus is distributed worldwide with 42 known species from the Oriental Region (Smith 1975) when last cataloged, 17 from the Australasian and Oceanian Regions (Smith 1989), and 3 from the Palaearctic Region (Chvála and Kovalev 1989). Twenty-five species have since been reported from the Chinese mainland by Yang and Yang

(1989a, b, 1990, 1992a, b, 1994, 2003), Yang et al. (2002), and Saigusa and Yang (2002), most of which were included in *Drapetis* (*Elaphropeza*). Some other major references dealing with *Elaphropeza* include Bezzi (1904), Brunetti (1920), Melander (1927), Quate (1960), Smith (1965), and Chvála (1975).

In this paper, we review the species of the genus *Elaphropeza* from the Chinese mainland. Two species are described as new to science, based on specimens collected by Shuwen An and Xingyue Liu with sweep nets and a light trap in Guangxi. Additionally, the following **new combinations** are made for the Chinese species which were previously included in *Drapetis* (*Elaphropeza*): *E. centristria* (Yang and Yang 2003).

E. fujianensis (Yang and Yang 2003), *E. fuzhouensis* (Yang and Yang 2003), *E. guangxiensis* (Yang and Yang 1992a), *E. guiensis* (Yang and Yang 1989a), *E. jiangyongensis* (Yang and Yang 2003), *E. jinghongensis* (Yang and Yang 1990), *E. lancangensis* (Yang and Yang 1990), *E. lii* (Yang and Yang 1990), *E. longiconica* (Yang and Yang 1992b), *E. medipunctata* (Yang and Yang 1994), *E. meihuashana* (Yang and Yang 2003), *E. paucipunctata* (Yang and Yang 1989a), *E. pilata* (Yang and Yang 1994), *E. postnigra* (Yang and Yang 1990), *E. ruiensis* (Yang and Yang 1990), *E. striata* (Yang and Yang 1992b), *E. triangulata* (Yang and Yang 1992b), *E. xanthina* (Yang and Yang 1990), *E. xizangensis* (Yang and Yang 1989b), and *E. yunnanensis* (Yang and Yang 1992b). A key to the species of the genus from the Chinese mainland is presented for the first time. Holotypes and most paratypes of the new species are deposited in the insect collection of China Agricultural University (CAU), Beijing, and one paratype is deposited in the National Museum of Natural History (USNM), Washington, DC.

Basic terminology follows McAlpine (1981) and Steyskal and Knutson (1981). The following abbreviations for setae are used: *acr*-acrostichal, *ad*-anterodorsal, *av*-anteroventral, *d*-dorsal, *dc*-dorsocentral, *h*-humeral, *oc*-ocellar, *npl*-notopleural, *pd*-posterodorsal, *psa*-postalar, *pv*-posteroventral, *sa*-supra-alar, *sc*-scutellar, and *vt*-vertical.

KEY TO SPECIES OF *ELAPHROPEZA* FROM THE CHINESE MAINLAND

1. Thorax yellow, usually with black spots . . . 4
 - Thorax black 2
2. Antenna black. Henan
 - *E. henanensis* Saigusa and Yang (2002)
3. Antenna yellow with 1st flagellomere brownish yellow; 1 *vt*. Guangxi
 - *E. guangxiensis* (Yang and Yang)
 - Antenna entirely yellow; 2 *vt*. Guangxi
 - *E. liui* Yang and Gaimari, new species
4. Head black 8
 - Head yellow 5

5. Thorax entirely yellow. Guangxi
 - *E. pilata* (Yang and Yang)
 - Thorax with dark spots 6
6. Mesonotum with brownish lateral spot. Fujian
 - *E. fujianensis* (Yang and Yang)
 - Mesonotum without spots 7
7. Scutellum and metanotum black medially; pleuron lacking spots. Yunnan
 - *E. xanthina* (Yang and Yang)
 - Scutellum and metanotum brown except anterolateral corner of metanotum yellow; lower portion of meron brown. Fujian
 - *E. jiangyongensis* (Yang and Yang)
8. Mesonotum with black spots 12
 - Mesonotum entirely yellow 9
9. Hind tibia with 1 *ad*. Yunnan
 - *E. ruiensis* (Yang and Yang)
 - Hind tibia with 2 *ad* 10
10. Metanotum entirely blackish. Yunnan, Sichuan *E. longiconica* (Yang and Yang)
 - Metanotum yellow with blackish median portion 11
11. First flagellomere brown. Hainan
 - *E. bisetifera* Yang, Yang and Hu (2002)
 - First flagellomere yellow. Guizhou
 - *E. paucipunctata* (Yang and Yang)
12. Mesonotum not black posteriorly 15
 - Mesonotum black posteriorly 13
13. Wing with wide brownish median spot; hind tibia with 3 *ad*. Hainan
 - *E. alamaiculata* Yang, Yang and Hu (2002)
 - Wing without spot; hind tibia with 1–2 *ad* 14
14. Hind tibia with 1 *ad*. Yunnan
 - *E. postnigra* (Yang and Yang)
 - Hind tibia with 2 *ad*. Yunnan
 - *E. yunnanensis* (Yang and Yang)
15. Mesonotum with brown median vitta, but without lateral spot. Fujian
 - *E. centristriaria* (Yang and Yang)
 - Mesonotum without median spot or vitta, sometimes with lateral spot 16
16. Hind tibia with 2 *ad* 20
 - Hind tibia with 1 *ad* 17
17. Mesonotum with one rather large black lateral spot. Tibet *E. xizangensis* (Yang and Yang)
 - Mesonotum with one small black lateral spot 18
18. Scutellum and metanotum yellow. Fujian
 - *E. fuzhouensis* (Yang and Yang)
 - Scutellum and metanotum black 19
19. First flagellomere yellow; scutellum entirely black; pleuron with spot on meron only. Guangxi, Hainan
 - *E. medipunctata* (Yang and Yang)
 - First flagellomere dark yellow; scutellum with yellow apical margin; pleuron with spots on anepimeron, meron and metapleuron. Yunnan *E. jinghongensis* (Yang and Yang)

20. Legs entirely yellow 24
 – Legs partly dark yellow, brownish yellow, or dark brown 21
21. Arista pale; tibiae and tarsi dark yellow. Hainan . . . *E. pallidarista* Yang, Yang and Hu (2002)
 – Arista black; tibiae and tarsi variable 22
22. Femora greyish apically. Sichuan, Guizhou *E. guiensis* (Yang and Yang)
 – Femora entirely yellow 23
23. Metanotum yellow; fore and mid tibiae and all tarsi dark brown except tarsomere 5 black. Guangxi
 *E. anae* Yang and Gaimari, new species
 – Metanotum brownish; legs only with fore tarsus (except fore tarsomere 1) dark brownish yellow. Yunnan
 *E. lancangensis* (Yang and Yang)
24. Metanotum yellow 26
 – Metanotum blackish 25
25. Lateral spot on mesonotum triangular. Yunnan *E. triangulata* (Yang and Yang)
 – Lateral spot on mesonotum stripe-like. Yunnan, Fujian *E. striata* (Yang and Yang)
26. Scutellum yellow; abdomen entirely brownish. Yunnan, Hainan . . . *E. lii* (Yang and Yang)
 – Scutellum brown medially; abdomen yellow with tergites 4–5 dark brown. Fujian
 *E. meihuashana* (Yang and Yang)

***Elaphropeza liui* Yang and Gaimari,
 new species
 (Figs. 1–3)**

Diagnosis.—Head with 2 incurved *vt*. Antenna yellow; 1st flagellomere short, conical. Thorax black. Hind tibia with 1 *ad*.

Male.—Body length 2.3 mm, wing length 3.0 mm.

Head: Black with grey pollen; hairs and setae pale; eyes contiguous on face; ocellar tubercle with 2 long, strong *oc* and 2 short posterior hairs; 2 pairs of *vt* curved inward. Antenna yellow; scape bare, shorter than pedicel; pedicel with circlet of apical hairs; 1st flagellomere short, conical, 1.1 times longer than wide, short pubescent; arista long (6.0 times longer than 1st flagellomere), black, short pubescent. Proboscis yellow with pale hairs; palpus yellow with 4 brown hairs and 2 brown setae.

Thorax: Black with grey pollen; hairs and setae pale; pleuron more or less subshining black; *h* absent, 2 long *npl*, 1 long *sa*, 1 very short *psa*, *acr* absent, 3 *dc* (pos-

teriormost *dc* longest); scutellum with two pairs of *sc* (basal pair very short, about $\frac{1}{3}$ as long as apical pair). Legs yellow, except tarsomere 5 brown; hairs and setae brown; fore coxa with 2 *d* at base, apically with 3 setae; mid coxa apically with 5–6 setae; fore and mid femora subequal in thickness, 1.1 times thicker than hind femur, each with 1 preapical seta, one row of *av* and one row of *pv*; fore tibia apically with 2 *av* and 1 *pv*; mid tibia apically with 2 *av* and 2 *pv*; hind tibia with 1 brown *ad* at middle, apically with 3 short setae. Wing hyaline, veins brown. Calypter dark brown with black hairs. Halter yellow.

Abdomen: Dark brown with grey pollen; hairs and setae blackish; tergites 1–3 nearly membranous, each with one long triangular lateral sclerite; tergite 4 enlarged but tergite 5 narrowed, each with two groups of short black spines medially. Male genitalia (Figs. 1–3): Left tergal lobe rather narrow basally, with its surstylus short and nearly quadrate with short obtuse apical corners; right tergal lobe fused with its surstylus, distinctly longer than wide, with long setae on outer margin, and with wide apex; left cercus long, fingerlike, acute apically; right cercus long, fingerlike, nearly acute apically.

Female.—Unknown.

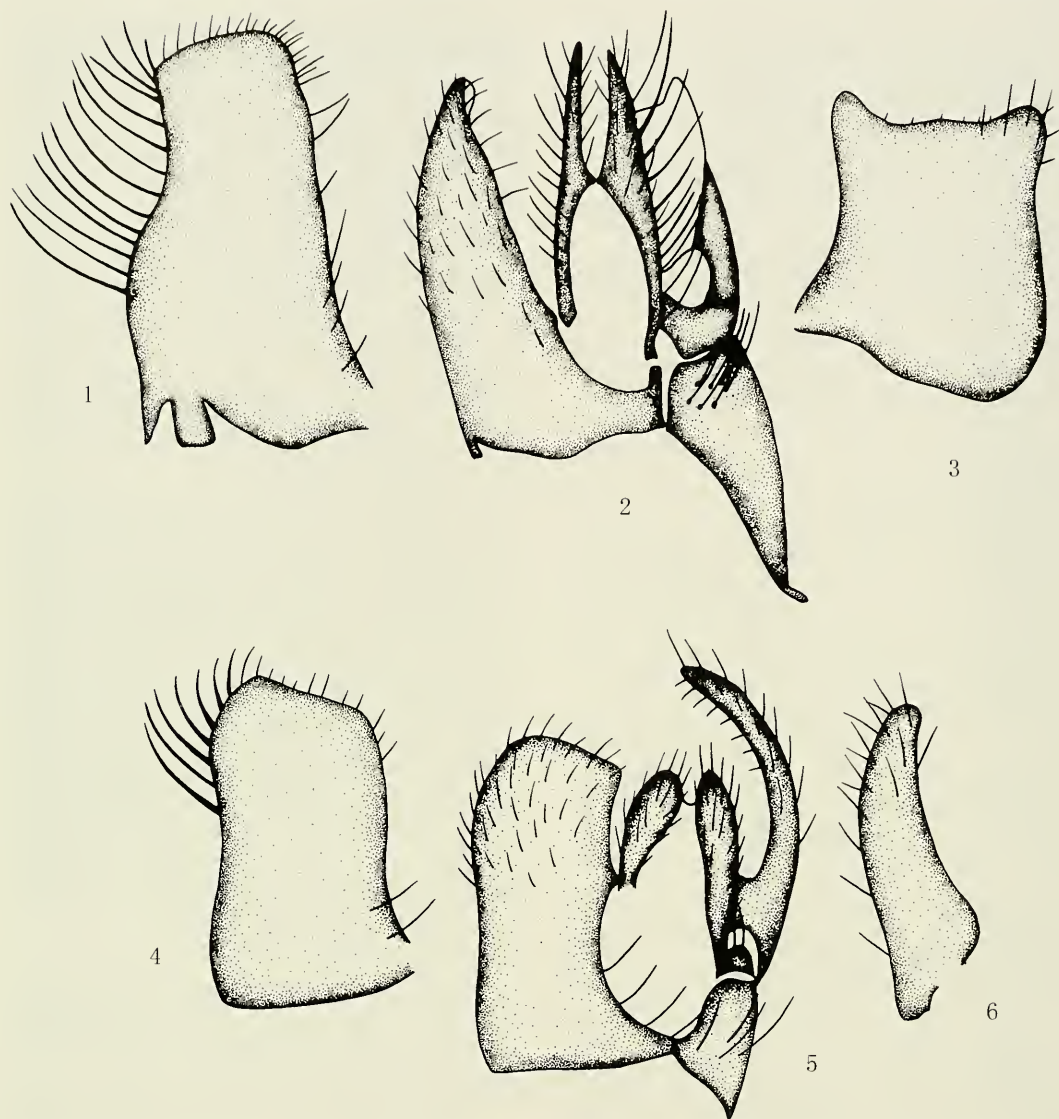
Type material.—Holotype ♂, deposited in CAU: Guangxi, Maoershan National Nature Reserve, Sanjiangyuan (1,900 m), 30 June 2003 (light trap), Xingyue Liu.

Etymology.—The species is named after the collector Mr. Xingyue Liu.

Remarks.—The new species is somewhat similar to *E. guangxiensis*, from Guangxi. But in *E. guangxiensis*, the antenna is yellow with the 1st flagellomere brownish yellow, and only 1 *vt* is present (Yang and Yang 1992a).

***Elaphropeza anae* Yang and Gaimari,
 new species
 (Figs. 4–6)**

Diagnosis.—Head black, with 1 incurved *vt*. Antenna brownish; 1st flagellomere blackish, long, conical. Thorax yellow, with



Figs. 1-6. 1-3, *Elaphropeza liui*, male. 1, Right tergal lobe. 2, Genitalia, dorsal view. 3, Left surstylus. 4-6, *Elaphropeza anae*, male. 4, Right tergal lobe. 5, Genitalia, dorsal view. 6, Left surstylus.

a brown lateral spot on mesonotum. Fore and mid tibiae dark brown; hind tibia with 2 *ad*.

Male.—Body length 1.6 mm, wing length 2.0 mm.

Head: Black with grey pollen; hairs and setae blackish; eyes contiguous on face; ocellar tubercle with 2 *oc* and 2 short posterior hairs; 1 *vr* curved inward, slightly longer than *oc*. Antenna brownish with 1st

flagellomere blackish; scape bare, shorter than pedicel; pedicel with circlet of apical hairs; 1st flagellomere long, conical, 3.0 times longer than wide, short pubescent; arista long (2.0 times longer than 1st flagellomere), black, short pubescent. Proboscis brownish yellow with black hairs; palpus yellow with blackish hairs.

Thorax: Yellow with pale grey pollen; mesonotum with one brown lateral spot just

before wing base; hairs blackish, setae black; *h* absent, 2 *npl* (posterior *npl* longer), 1 *sa*, 1 short *psa*, biseriate *acr*, 1 long strong *dc*; scutellum with two pairs of *sc* (basal pair very short, about $\frac{1}{4}$ as long as apical pair). Legs yellow, except fore and mid tibiae and all tarsi dark brown except tarsomere 5 black; hairs and setae blackish; fore coxa with 2 *d* at base, apically with 2 setae; mid coxa apically with 3 *d*; hind coxa with 1 outer seta at apical margin; fore and mid femora equal in thickness, 1.1 times thicker than hind femur; fore femur with 1 long thin *pv* at extreme base; mid femur with 1 preapical anterior seta; hind femur with 3 *d* at base; fore tibia apically with 1 short strong *av* and 1 short strong *pv*; mid tibia with one row of small black spines, apically with 2 *av* and 1 *pv*; hind tibia with 2 *ad*, apically with 3 short weak setae. Wing nearly hyaline, veins brown. Calypter brown with black hairs. Halter dark yellow.

Abdomen: Dark brown with grey pollen; hairs and setae blackish; tergites 1–3 nearly membranous except tergites 2–3 each with one small lateral sclerite; tergites 4–5 blackish, each with one group of short black lateral spines. Male genitalia (Figs. 4–6): Left tergal lobe rather narrow, with its surstylus long, finger-like, and curved inward apically; right tergal lobe rather large, fused with its apically widened surstylus; left cercus long and obtuse apically, right cercus short and obtuse apically.

Female.—Body length 2.1–2.2 mm, wing length 2.1–2.3 mm. Similar to male, but scape and pedicel dark brownish yellow.

Type material.—Holotype ♂, deposited in CAU: Guangxi, Maoershan National Nature Reserve (2100 m), 30 June 2003, Shuwen An. Paratypes: Same data as holotype (2 ♀, CAU; 1 ♀, USNM); Guangxi, Maoershan National Nature Reserve (350 m), 27 June 2003, Shuwen An, (1 ♀, CAU).

Etymology.—The species is named after the collector Ms Shuwen An.

Remarks.—The new species is somewhat similar to *E. lancangensis* from Yunnan. But in *E. lancangensis*, the metanotum is

brownish, and the legs are yellow with only the fore tarsus (except fore tarsomere 1) dark brownish yellow (Yang and Yang 1990).

DISCUSSION

Twenty-seven of the 69 Oriental species of the genus *Elaphropeza* are now known from the Chinese mainland, with 17 species endemic to the southwestern region of China, one endemic to the central region, and seven endemic to the southern region. Only two species, *E. lii* and *E. striata* are relatively widely distributed, being in both the southern and southwestern regions of China. The southwestern region of China appears to be the center of diversity for *Elaphropeza* on the Chinese mainland.

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